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Atmospheric Measurement Techniques Discussions



# *Interactive comment on* "Contrasting aerosol trends over South Asia during the last decade based on MODIS observations" *by* D. G. Kaskaoutis et al.

**Anonymous Referee #2**

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In this work the authors have used satellite data from MODIS Terra to study the aerosol trends over South Asia during the last decade. As other referees have also pointed out, it is not straightforward to use satellites alone to define the aerosol trends. In addition, MODIS Terra is known to have issues with the instrument degradation, which is causing artificial negative trend in aerosol optical depth on a global scale. The authors do not discuss how this might effect their results, which I find as a weak point of this study. Hence, I would also suggest to include data from other satellite sensors, such as MODIS Aqua, MISR and/or SeaWiFS to support the findings. In addition, as the authors point out in the conclusions, further investigations from ground-based mea-

surements is needed.

I would also suggest the authors to use MODIS L2 quality checked-data, so that they would be able to study more carefully e.g. the regional effects, or the effect of cloudiness. The L3-data is not the best possible dataset for this kind of study, where the results are mainly based on satellite retrieved AOD. By using the L2-data authors could explain in more detail the averaging procedure over the seasons, and if/how the sampling in each month is taken into account.

As a minor comment I would suggest to include an additional figure showing the four different study areas on a map. That would help the interpretation of the results.

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Interactive comment on Atmos. Meas. Tech. Discuss., 4, 5275, 2011.